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ABSTRACT

A study addressed the following questions: (1) whether the recognition of rhetorical functions and techniques in English helps students of English as a Second Language understand written technical information better; and (2) whether students are better prepared to write accurate summaries of scientific or technical texts if they have been taught rhetorical functions and techniques. Subjects were 60 university-bound science students with 6 years of elementary and secondary school training in English as a Second Language, randomly assigned to two groups. In a 3-month period, both groups were taught deduction and comprehension skills at the morphological and syntactic levels. The experimental group was also taught cohesion devices and specific rhetorical functions commonly used in written material for science and technology. Tests of reading comprehension and summarizing skills were devised for the study. Results indicate that subjects in the experimental group gained higher scores in reading cmprehension by giving correct answers to questions requiring reinterpretation, reorganization, and inference. The experimental group also performed better on summary-writing tasks. It was found that written material with few discourse markers and more implicit cohesive items were difficult for both groups. Further research is recommended. (MSE)

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HOW THE KNOWLEDGE OF RHETORICAL STRUCTURE HELPS IMPROVE READING AND WRITING SKILLS.

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I. INTRODUCTION

A. Literature review.

Many attemps have been made to demonstrate the influence of rhetorical structure in general English. The most outstanding ones have been conducted by P.L. Carrell (1984-5); apart from these some other investigations have been performed with the aim of giving evidence to the fact that knowing rhetorical structure of texts does play an important role in comprehension. Let us see some concrete examples on this subject reported by Shepherd (1984). Clark (1975: 329) jumbled the order of rhetorical functions of a paragraph as a consequence her students found it difficult to reconstruct the argument of a text. A year later Urquart compared the readability of narrative texts containing the same information but differing in overall organization. He found that the chronological order texts proved significantly faster to read and easy to recall than non chronologically equivalent. Augstein (1973: 30) taught rhetorical organization using flowcharts; This technique results in an outstanding improvement on the part of the subjects in their ability to write down summaries.

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Finally as Santos (1987) points out in a useful research "the recognition of markers as elements of text organization appears to be an important factor in helping students attain a detailed comprehension of the text.

B. Statement of purpose.

The purpose of this research was to confirm or reject the following investigation questions:

1.- Does the recognition of rhetorical functions and techniques help students understand a piece of written information better?

2.- Are subjects better prepared to write accurate summaries of scientific or technical texts if they have been taught rhetorical functions and techniques?

II. METHODS

A. Subjects.

Sixty students were chosen to participate in the experience. They belonged to two Science C.O.U. (*) groups. They were ESL university bound students who were going to study scientific and technical university studies the following academic year.

All students had been studying English for six years, 3 years in EGB (Primary education) and 3 years in BUP (Secondary education) Some subjects have been excluded from the experience as they have a different ESL background, among these we can name the following: - Those who had studied French as a foreign

language in EGB

- Those who had visited an English speaking country
- Those who took either private English lessons at home or attended English lessons at a language school.
- Those who repeated C.O.U. as a result of having failed their exams in the previous year.

With respect to the method of selection we have to make clear that subjects of both groups were assigned to each group at random.

An important issue to take into account is the one of mortality, in other words, the students who self-select themselves out of a group for any number of reasons. There were five students who dropped out of the study (two of them belonged to the experimental group and the remaining to the control one); Among the reasons for this attrition we could count on serious illness (one), transfer to another institution (one), dropping out of school (one), a repetitive missing class (three).

(*) Equivalent to 12th grade students in the U.S.A.

B. Materials

Both groups have worked with 14 non-authentic texts with an average length of 20 to 30 lines (240 to 360 words). These passages have been especially designed for students who use English as the medium of instruction for the subject they are studying; Most of these texts have been selected from books of the series "English in Focus" whose editors are Allen, J.P.B. & Widdowson, H.G. (see references). The mentioned texts deal with a

wide range of topics such as: Agriculture, Architecture, Biology, Economics, Electrical Engineering, Mechanical Engineering, Medicine, Physics and Telecommunications.

We used two kinds of tests:

1.- The first type was designed to check reading skill. It consists of a text of those previously mentioned and six comprehension questions. These questions were of the following types:

- three questions of literal comprehension, also called factual "whose answers are directly and explicitly available in the text" (Nuttal 1982: 132).

- two questions involving reorganization or reinterpretation "these are questions which require the students to obtain literal information from various parts of the text and put it together, or to reinterpret information (Nuttal 1982: 132). As it can be easily deduced these types of questions require on the part of the student to see the text as a whole instead of looking at it as a set of independent sentences.

- One question of inference, "these are questions that oblige the students to 'read between the lines,' to consider what is implied but not explicitly stated [...] They require the student to understand the text well enough to work out its implications". (Nuttall 1982: 132).

2.- The second type of test was prepared to check writing skill. This test consists of summarizing a text. The reason for choosing such an exercise is the simple fact that we consider a

summary as an activity impossible to be performed accurately if students have not fully understood the passage. Furthermore, the subject has to master cohesion devices in order to write a coherent text.

We have designed two ways of summarizing:

- Traditional summary. Students are asked to sum up a text in , let us say, one third of total length.
- Functional summary. Students are given instructions to resume a specific or concrete aspect of a passage; in this case students have to select and summarize as well.

C. Procedures

We have used ten texts (as four of them have been prepared for testing) to illustrate lexical, syntactic and cohesive items as well as specific rhetorical functions and rhetorical techniques.

1.- The control group has been taught the following items:

- Morphological level:

* How to deduce meaning through word formation (root and affixes).

* How to deduce meaning through context (definition, synonym, antonym, hyponym, features or characteristics and general knowledge).

* How to deduce meaning through word origin (cognate)

- Syntactic level:

* Ways to understand complex noun groups

* " " nominalization

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* " " coordination

* " " subordination

* " " participial & prepositional phrases

2.- The experimental group, apart from what have already been mentioned, has been taught:

- Cohesion level:

* How to spot implicit cohesive devices, such as reference and substitution, ellipsis, metaphor, synonym, etc.

* How to recognize explicit cohesive devices, namely, signals of sequencing of events, signals of discourse organization (exemplifying, focusing, specifying, etc), signals of the writer's point of view (additive, adversative, causal) (Halliday & Hasan 1976)

- The specific rhetorical function most commonly used in written EST discourse, such as:

* Description (Physical, function and process)

* Definition

* Classification

* Instructions and visual verbal relationship (to a lesser extent).

- The rhetorical techniques that provide relationships within the specific rhetorical functions already mentioned. The former are the following:

* Orders (time order, space order, causality and result)

* Patterns (causality and result, order of importance, comparison and contrast, analogy, exemplification and

illustration) (Trimble 1985).

Four tests have been used to test this experiment: two of them have been devoted to check reading comprehension (pre- & post-test) and two dedicated to do the summary (pre- & post-test) as well.

The approach that we have utilized to avoid the practice effect was the counterbalance (Brown 1988). The purpose of this procedure was to see that no individual took the same test twice; so two different but equivalent tests were administered to both groups. The pre-tests of the control group were the post-tests of the experimental group. Then the opposite forms were given to each group, in other words, the pre-tests of the experimental group were the post-tests of the control group.

The scores on the tests were assigned as follows:

- Reading comprehension test:

  Each question of literal comprehension .... 10 x 3 = 30

  Each question of reorganization
  or reinterpretation ..... 20 x 2 = 40

  The question of inference ..... 30 x 1 = 30

  100

An answer to be given the total punctuation should be fully understood and correctly expressed avoiding copying word by word from the text, so paraphrasing was a useful technique specially when answering literal comprehension questions.

- Summary tests:

Traditional Summary 70

Functional Summary 30

100

A summary to score the highest mark has to be summed up in such a way that all important ideas have been included and that details have been left out. All these ideas should be chained together with the most appropriate text markers avoiding repeating the same structures as those in the text.

Now we will describe the conditions during the study. First of all we have to say that both groups took their tests the same day of the week (on Monday); the control group took their tests from 12:00 to 13:00 while the experimental group sat for their exams from 13:10 to 14:10. Both classrooms were situated in a quiet area of the same building. As a consequence it is obvious that these tests were performed under similar conditions.

Both groups have had a total of 29 classes (60 minutes each) three days a week. The control group had lessons on Monday, Tuesday and Thursday while the experimental group had lessons on Monday, Wednesday and Friday. The experience lasted three months, the first quarter of the school year 1988. It took place at the "LUIS de GONGORA" high school in CORDOBA.

D. Analyses

The data have been grouped into two different ways:

First, the scores obtained by each individual of the

experimental group have been presented (table no 1) including both the ones of the reading and as the writing tests. In the same way as the table 1 the outcome of the control group has been presented (table no 2).

Second, the distribution of scores on two different frequency tables has been displayed (Valette 1977), table 3 presenting the four reading tests performed by both the control and the experimental groups. Table 4 showing the outcome of the pre- & post-tests on writing which have been done by both groups.

III. RESULTS

If we look carefully at the results obtained by the test-takers of the experimental group in the reading post-test (table no 1) we can realize that the mentioned group has got slightly higher scores (average score X 63) than the control one (average score X 51), see table 2.

On the other hand, if we observe the outcome obtained by the subjects of the experimental group in the writing post-test (table no 1) we can notice that, again, this group got an average score of X 61 while the control group got only X 49 (table no 2), a remarkable difference as the latter group obtained poorer score.

The next section (Discussion / Conclusions) will be devoted to comment on the results just expressed.

TABLE no 1

Experimental group's score on the four tests.

	E X P E R I M E N T A L		G R O U P	
NAME	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
	R E A D I N G		W R I T I N G	
1.RAMIREZ	80	100	90	100
2.CRUZ	65	95	80	90
3.VARELA	65	95	75	90
4.RODRIGUEZ	60	90	75	85
5.MORA	55	85	70	80
6.FIESTAS	55	80	60	75
7.CONRADO	55	75	65	75
8.ONETTI	55	75	65	70
9.SOTILLO	50	70	55	70
10.RIVERA	50	70	55	70
11.OSUNA	45	65	50	65
12.PEREZ	45	65	50	60
13.PALMERO	45	60	45	60
14.PRADOS	45	60	45	60
15.CHAMORRO	45	60	45	55
16.ROMERO	45	55	45	55
17.JUNQUERA	45	55	45	50
18.ALCANTARA	45	*	45	*

19.ROMERO	45	50	45	50
20.MALDONADO	45	50	45	50
21.BASCON	45	50	45	50
22.BERNAL	45	*	40	*
23.BAENA	40	50	40	50
24.MOLINA	40	50	40	45
25.REINA	40	50	40	45
26.NU EZ	40	45	40	45
27.SEQUERA	40	45	35	45
28.ANDUJAR	35	45	35	40
29.GARZON	35	45	35	40
30.CACERES	35	40	35	40

(*) Drop-outs

TABLE no 2

Control group's scores on the four tests.

	C O N T R O L	G R O U P		
NAME	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
	R E A D I N G		W R I T I N G	
1.ROMERO	70	95	80	85
2.SANCHEZ	65	90	75	80
3.MORILLA	65	65	60	65
4.MESA	60	60	55	60
5.BASCON	55	55	55	55
6.OSUNA	55	55	55	55
7.VALPUESTA	55	55	55	55

8.CONTRERAS	55	55	50	55
9.FERNANDEZ	50	55	50	55
10.HERRERA	45	55	50	50
11.GIL	45	50	45	50
12.MONTERO	45	50	50	50
13.DURAN	45	50	45	50
14.LOPEZ	45	50	45	45
15.OSTOS	45	45	45	45
16.GOMEZ	45	45	45	45
17.RODRIGUEZ	45	45	45	45
18.FARFAN	45	*	45	*
19.MARTIN	45	45	45	45
20.VALSECA	45	45	45	45
21.FERNANDEZ	40	45	45	45
22.RIEGO	40	45	40	40
23.BLAZQUEZ	40	45	40	40
24.GAMEZ	40	45	40	40
25.ROSAL	40	40	40	40
26.LAGUNA	40	*	40	*
27.DIANA	40	*	40	*
28.MARTINEZ	35	40	35	35
29.SANCHEZ	35	40	35	35
30.LIMA	35	35	35	35

(*) Drop-outs

TABLE no 3

Frequency table of the four reading tests.

	EXPERIMENTAL GROUP		CONTROL GROUP	
SCORES	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
	R E A D I N G		R E A D I N G	
95-100		3		1
90-94		1		1
85-89		1		
80-84	1 (*)	1		
75-79		2		
70-74		2	1	
65-69	2	2	2	1
60-64	1	3	1	1
55-59	4	2	4	6
50-54	2	6	1	4
45-49	12	4	11	9
40-44	5	1	7	3
35-39	3		3	1
Drop-outs		2		3

(*) these figures represent the number of subjects who got these scores.

TABLE no 4

Frequency table with the four writing tests.

	EXPERIMENTAL GROUP		CONTROL GROUP	
SCORES	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
	W R I T I N G		W R I T I N G	
95-100		1		
90-94	1	2		
85-89		1		1
80-84	1	1	1	1
75-79	2	2	1	
70-74	1	3		
65-69	1	1		1
60-64	2	3	1	1
55-59	2	2	4	5
50-54	2	5	4	4
45-49	9	4	10	7
40-44	5	3	6	4
35-39	4		3	3
Drop-outs		2		3

IV. DISCUSSION / CONCLUSIONS

Let us go back now to the introduction section to see if the research questions have been confirmed or rejected and if so, to what extent. The first investigation question was: "Does the recognition of rhetorical functions and techniques help students

understand a piece of imformation better?".

As a result of having analyzed the data in the tables we come to the conclusion that, in fact, the recognition of these rhetorical functions and techniques do help subjects get more detailed comprehension of a text. Also we have to take into account that half of the questions (reorganization, reinterpretation and inference) require the students to understand the underlying network of the text to find out the answers requested, that is to say, to fulfill their task.

After having examined closely these tests we noticed that high scores on the experimental group were due to the right answers of those questions requesting the test-takers not merely explicit information but implicit one, we mean, the ones dealing with reinterpretation, reorganization and inference.

With respect to the second investigation question, if subjects are better equipped to write precise summaries as a consequence of having been taught rhetorical functions and techniques, we have to confirm that, according to the present results, students, being able to recognize the text structure of a passage, could better distinguish main ideas from supporting details, important statements from illustrations or examples as well as they can make more appropriate use of discourse markers to link together the essential of a text.

Nevertheless we should be cautious not to think that these considerations can be applied to every teaching situation. Because elaborating detailed comprehension and accurate summaries

involved other factors studied also by both groups such as deducing meaning of words and decodifying complex syntactic phrases. So subjects could have coped with the reading and writing difficulties activating the other strategies mentioned.

There are also some extraneous variables that could influence the results of a research if they are not controlled; Let us have a close look at this situation: "It is possible for subjects to be so pleased at being included at a study that the results of the investigation are more closely related to this pleasure than to anything that actually occurs in the research" (Brown 1988: 32). This is the so called Hawthorne effect. This effect in our reported research has not been controlled as a consequence is likely to have a positive influence on the outcome. Another important uncontrolled variable is the one called subject expectancy, "which occurs when the subjects think they have figured out what a study is about and try to 'help' the researcher to achieve the apparent aims" (Brown 1988: 34). In this case the mentioned variable has been under control as a result of having been minimized the obviousness of the aims. Finally, we have to realize that "researchers have expectations that may color the results of a study" (Brown 1988: 34).

We also have to point out that students in the control group got poorer marks in other subjects of the curriculum (Mathematics and Biology).

A remarkable fact that occurred during the experience was that texts containing few discourse markers and consequently more

implicit cohesive items had a similar difficulty for both groups and for this reason the outcome of the control and the experimental group were very much alike. Because subjects in the second group even activating their knowledge of rhetorical organization were unable to find links which facilitate their comprehension and ease the way to resume the texts.

To finish with, we would like to offer a suggestion for further research that, from our point of view, could be quite useful: to what extent are the results of this investigation due to the knowledge of rhetorical organization and not to the other strategies that students activated (lexical level, syntactic level, cohesion level) or as Santos stated in a recent research :"The best proportion of each of the ingredients to make the cake more delicious may serve as a very interesting topic for investigation in another piece of research by those interested in the subject. (Santos 1987: 42).

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